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INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

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| <p>(54) Title: AN ARRANGEMENT FOR A CONTAINER CAPABLE OF BEING FILLED WITH MATERIAL IN THE FORM OF A POWDER</p> <p>(57) Abstract</p> <p>Arrangement for a container (1) capable of being filled with material in the form of a powder and of being used in a powder spraying plant so that, once the powder material (9) has been fluidized inside the container, it will be discharged to the intended spray pistol. The invention permits, amongst other things, the use of packs for the powder which can be connected directly to the outlet for the powder to the spray pistols without having to transfer the powder from the pack to a permanent powder container. A base plate (4) consisting of an air-permeable material is so arranged as to be accommodated at the bottom (1A) of a container (1) executed in the form of a pack. An air inlet duct (5) leads from the upper side of the plate to the lower side of the plate so as to permit a supply of air to be provided to the material (9) inside the container via the plate (4), for the purpose of bringing about the fluidization of the material (9) inside the pack (1).</p> | | | |

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An arrangement for a container capable of being filled with material in the form of a powder

The present invention relates to an arrangement for a container capable of being filled with material in the form of a powder.

It is usual for there to be present in powder spraying plants, for example, a permanently arranged container having an air-permeable base plate and designed to accommodate the specified material in the form of a powder, such as a colour pigment powder, which it is proposed to use and to discharge after fluidization inside the container. Powder is intended to be filled 5 into the container in question as required, for instance when the powder in the container has run out or when it is wished to change the powder in order to spray powder of a different colour or quality. It may prove difficult and slow in such a case to execute said filling or to change the powder in the container, possibly 10 because it is laborious to clean the container and it may be difficult to know what kind of powder the container holds.

The principal object of the present invention is in the first place to provide an arrangement of the above-mentioned kind which, amongst other things, solves said problem, and which 20 is simple and inexpensive to produce and is accordingly able to accompany the pack of powder from the moment at which it is filled until it is thrown away with the pack once the latter has been emptied of its powder.

The aforementioned object is achieved by means of 25 an arrangement in accordance with the present invention, which is characterized essentially in that a base plate consisting of an air-permeable material is so arranged as to be accommodated at the bottom of a container executed in the form of a pack, in conjunction with which an air inlet duct leads from the upper side 30 of the plate to the lower side of the plate so as to permit a supply of air to be provided to the material via the plate, for the purpose of bringing about the fluidization of the material inside the pack.

The invention is described below as a number of

preferred illustrative embodiments, in conjunction with which reference is made to the accompanying drawings, in which:

Fig. 1 shows a perspective view of a base plate;

Fig. 2 shows a perspective view of a further base
5 plate; and

Fig. 3 shows a section through a base plate and a pack.

Arranged in such a way as to be accommodated at the bottom 1A of a pack 1 serving as a powder container, which may be 10 executed in the form of, for instance, a pouch of air-impermeable material such as plastic, for example, or in the form of, for instance, a pouch 2 accommodated in a box 3, is a base plate 4 which consists of a part 4A comprising air-permeable material. An air inlet duct 5 extends preferably through said plate part 4A as 15 far as the area of the under side of the plate so as to permit air 6 to be supplied via an attachable hose 7 or similar line, which extends above the base plate 4 from the area of the mouth of the pack and an appropriate air supply arrangement to said area 8 before passing further through the base plate part 4A to the 20 material 9 in the form of a powder accommodated above the plate 4 for the purpose of fluidizing said material 9 so that it becomes porous and is able to be discharged easily to the specified spray pistol via a discharge feed device capable of being lowered into the pack 1 and the powder 9.

25 The base plate part 4A may consist of, for example, a sheet of 'Tretex' material or some other, porous and air-permeable material.

The bottom area 8 of the plate 4 can be in the form of a hollow air receiving part 10, which can be in the form of a 30 plastic layer attached to the under side of the base plate 4. Said bottom layer 10 can be attached around the periphery of the base plate part 4A and to said base plate part 4A at a certain distance from its peripheral part 11 via upward-projecting depressions 12 or some other supporting connections. These depressions 12 extend 35 between said base plate layer 10 and the base plate part 4A and can be in the form of a number of areas formed in the base plate layer 10 by pressing.

Air, which is supplied to the plate 4 via the hose 7 to the area 8, is led through the base plate part 4A and up to the material 9 in the form of a powder so as to fluidize same in a previously disclosed manner.

5 One variant of the base plate, which is not shown in the drawings, may contain only a single plate part of porous material which exhibits around its periphery a seal so arranged as to provide a seal between the base plate and the pack inside which it is intended to be accommodated, for example a pouch, bag, box
10 or can, etc. Simple construction of the base plate is permitted in this way, since the lower part of the pack is able to function as an air receiving space.

The invention is not restricted to the illustrative embodiments described above and illustrated in the drawings, but
15 may be modified within the scope of the Patent Claims without departing from the idea of invention.

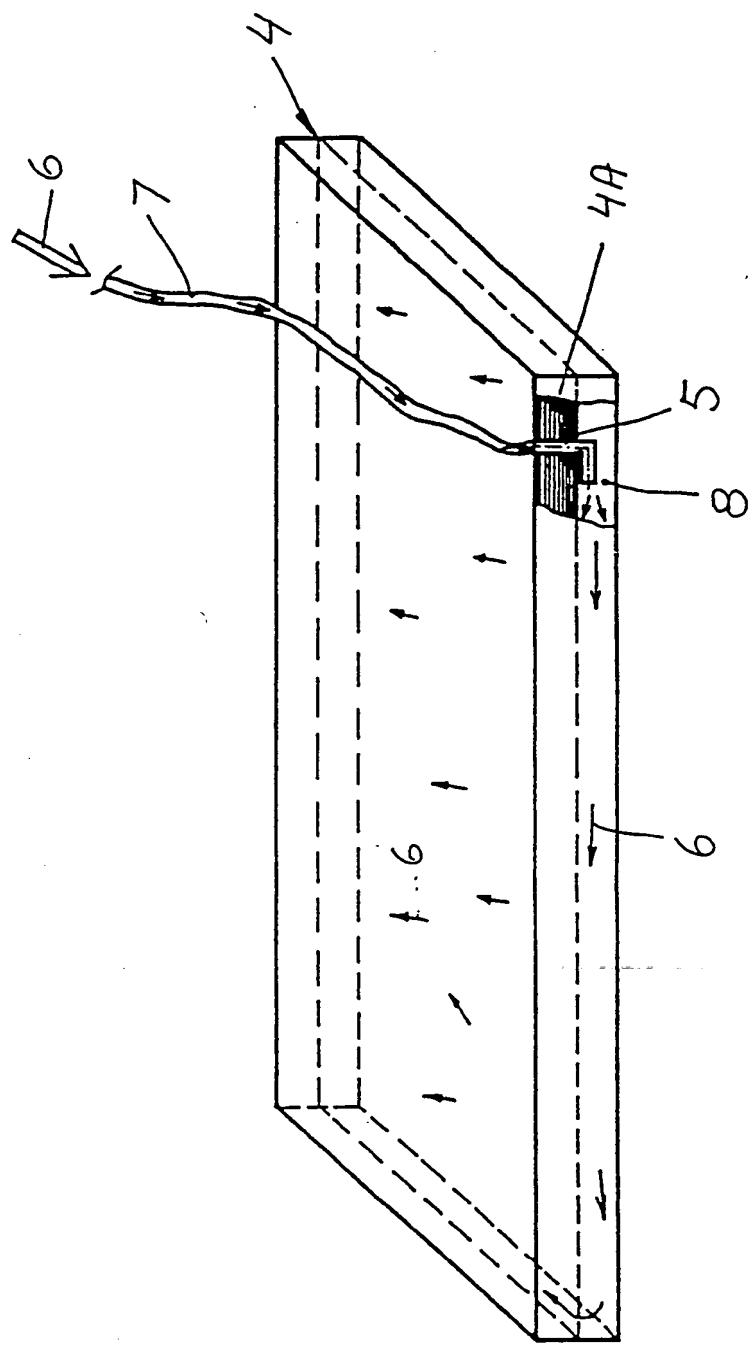
P a t e n t C l a i m s

1. An arrangement for a container (1), capable of being filled with material in the form of a powder (9), characterized in that a base plate (4) consisting of an air-permeable material is so arranged as to be accommodated at the bottom (1A) of a container (1) executed in the form of a pack, in conjunction with which an air inlet duct (5) leads from the upper side of the plate to the lower side of the plate so as to permit a supply of air to be provided to the material (9) via the plate (4), for the purpose of bringing about the fluidization of the material (9) inside the pack (1).
2. An arrangement according to Patent Claim 1, characterized in that the base plate (4) consists of a porous material such as 'Tretex' material.
3. An arrangement according to any of the above Patent Claims, characterized in that the air inlet duct (5) extends through the base plate (4) and is capable of being connected to a line (7) extending to the outside of the pack.
4. An arrangement according to Patent Claim 3, characterized in that the base plate (4) exhibits a hollow air receiving part (10).
5. An arrangement according to Patent Claim 4, characterized in that said air receiving part (10) is constituted by a plastic layer (10) attached to the under side of the base plate (4).
6. An arrangement according to Patent Claim 5, characterized in that the bottom plastic layer (10) is in contact with the air-permeable part (4A) of the base plate (4).
7. An arrangement according to Patent Claim 6, characterized in that said contacts are constituted by a number of depressions (12) arranged in the bottom plastic layer (10) or by other supports extending between said plastic layer (10) and said air-permeable part (4A) of the base plate (4).

8. An arrangement according to any of the above Patent Claims, characterized in that a seal extends around the periphery of the base plate.

9. An arrangement according to any of the above Patent Claims, in which the pack (1) consists of a pouch, bag, box or can, etc., characterized in that the base plate (4) constitutes a unit which is capable of being accommodated inside said pack (1) from the moment at which the pack is filled until after it has been used.

FIG. 1



INTERNATIONAL SEARCH REPORT

International Application No PCT/SE86/00525

I. CLASSIFICATION OF SUBJECT MATTER (if several classification symbols apply, indicate all) *

According to International Patent Classification (IPC) or to both National Classification and IPC 4

B 05 B 7/24

II. FIELDS SEARCHED

Minimum Documentation Searched †

| Classification System | Classification Symbols |
|-----------------------|---|
| IPC 4 | B 05 B 7/00, /24, /26, /28-/32; B 65 D 83/06, 81/18, /20 |
| US C1 | <u>239</u> : 310, 311, 325, 346, 352, 372, 373; <u>222</u> : 1, 193-195, 630-637 |

Documentation Searched other than Minimum Documentation
to the Extent that such Documents are Included in the Fields Searched *

SE, NO, DK, FI classes as above

III. DOCUMENTS CONSIDERED TO BE RELEVANT *

| Category * | Citation of Document, ¹¹ with indication, where appropriate, of the relevant passages ¹² | Relevant to Claim No. ¹³ |
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| X | US, A, 3 134 513 (R ASHMAN) 26 May 1984 | 1-9 |
| X | DE, A1, 2 042 621 (WSESOJUSNY NAUTSHNO-ISSLEDO-WATESKIJ INSTITUT) 2 March 1972 | 1-9 |
| X | SE, B, 387 256 (ATLAS COPCO AB) 6 September 1976 & FR, 2155740 DE, 2253633 US, 3797750 GB, 1356525 AU, 48231/72 | 1-9 |
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IV. CERTIFICATION

Date of the Actual Completion of the International Search

1987-03-10

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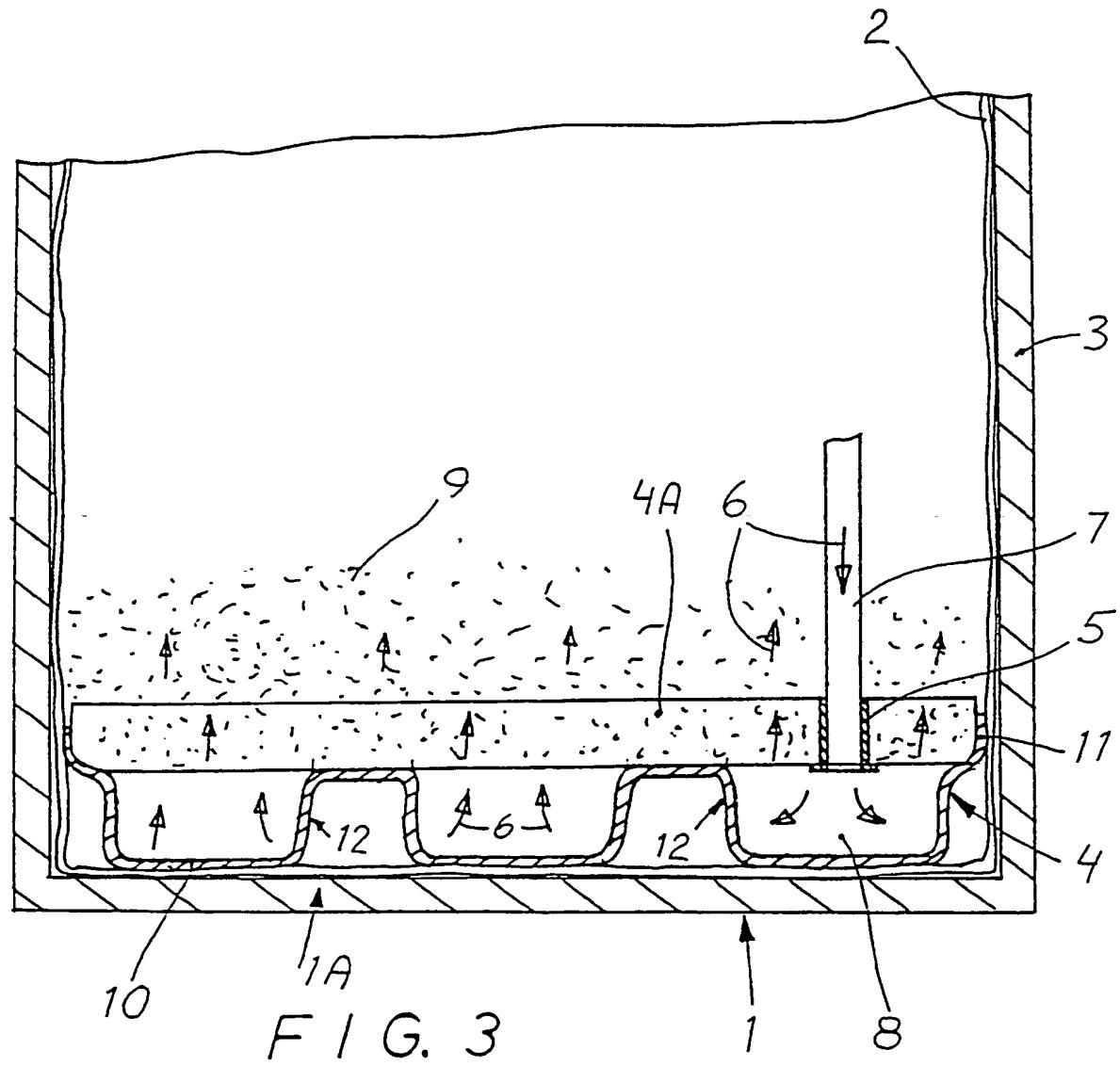
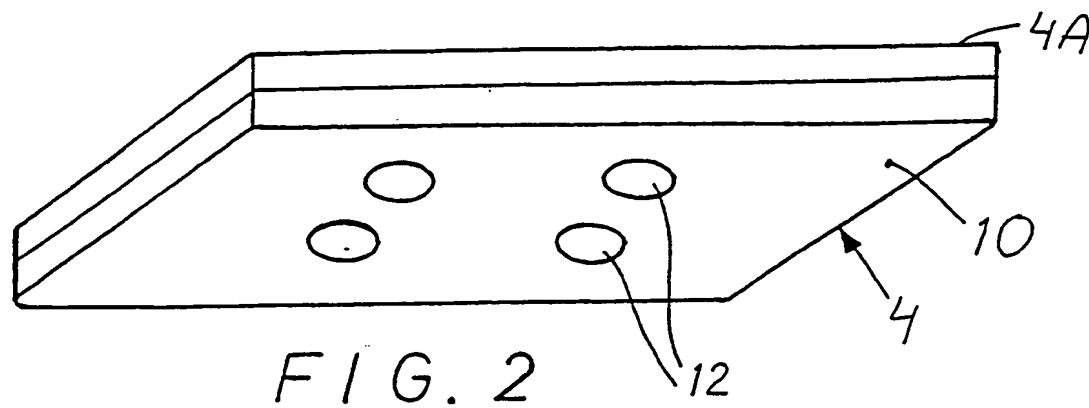
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III. DOCUMENTS CONSIDERED TO BE RELEVANT (CONTINUED FROM THE SECOND SHEET)

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| X | FR, B, 2 048 902 (BETHLEHEM STEEL CORPORATION) 19 March 1971 & NL, 7007840 DE, 2026251 US, 3653544 GB, 1313406 US, 3741789 BE, 750906 | 1-9 |
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